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# TRAMCARS

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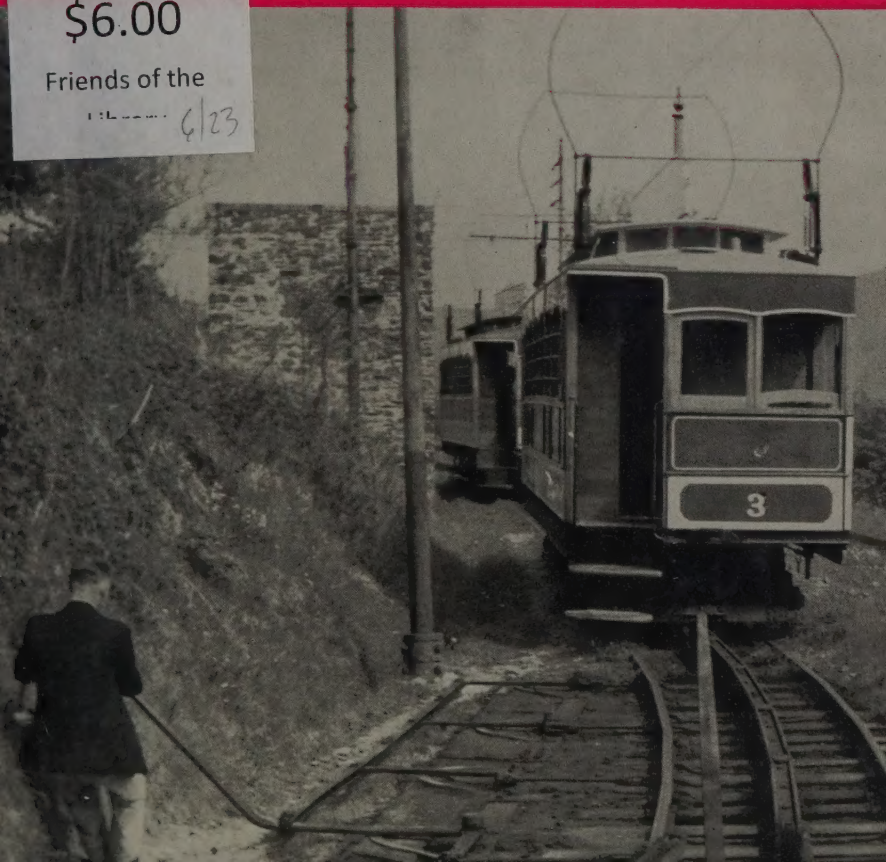

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VETERAN & VINTAGE
SERIES

# *TRAMCARS*

J. H. Price

LONDON

**IAN ALLAN**

*Double-deck electric tramcars were very rare on the Continent, but one has been kept at Copenhagen. No. 419 began life in 1900 as a single-ended open-top car of Frederiksberg Sporveje, and was later fitted with a half-length top cover which left the rear seats uncovered; the trolley pole is of an early British-made type with outside springs. These cars were withdrawn from passenger service in 1935.*

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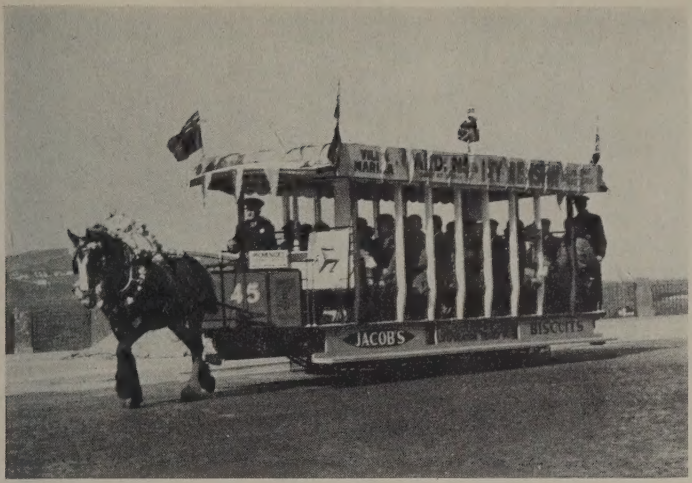
**Front Cover.** *Two of the well-maintained cars of the Snaefell Mountain Railway (Isle of Man), built by G. F. Milnes in 1896.*




*One of the unique horse trams of Douglas Corporation (No. 45, built in 1908) leaving the Victoria Pier terminus on its 20-minute trot around Douglas Bay.*

# *Introduction*

ONE OF OUR national characteristics is a fondness for animals; another, less easily explained, is a fondness for old pieces of machinery. Each year our scrap-metal merchants are cheated of a considerable tonnage of raw material in the cause of history, some by our science museums, the greater part by individual enthusiasts. Traction engines, lovingly cared for by their new owners, chug their way along country lanes to attend rallies, tall-chimneyed late-Victorian locomotives haul vintage trains through the Sussex countryside, smaller and older locomotives haul smaller and older trains up remote Welsh valleys, two hundred early motor-cars at a time make the annual run to Brighton, and dedicated steam-worshippers converge on fields and farmyards to see and hear some roundabout and fairground organ coaxed into life, driven once again by real steam. The enthusiasm for the mechanical past, which fifty years ago scarcely existed at all, is now spreading to other fields—lorries, buses, aircraft, farm machinery, tanks and paddle-steamers—and one of its stranger manifestations is a sudden interest in trams. Another five years, and it would have been too late; there would have been none left, at least of the vintage types most in demand.

The tramcar certainly deserves a place in our transport museum collections, for it played an enormous part in the development of our towns. Tramways opened up the suburban areas of cities and made possible the outward spread of their populations, which in turn made it possible at last to tackle the problem of the industrial slums. Trams, in the days before the motor car and motor bus, provided cheap and plentiful short-distance transport for all classes, and held pride of place in urban public transport for many years; they laid the foundations of municipal transport operation in Britain, and brought into being much of our present heavy electrical industry. But despite this, the tramway was singularly lacking in mementos; in 1948, the number of trams in captivity was less than a dozen, half of them horse cars and only three of them electric. Today, the combined total has risen to more than one hundred, of which half have been saved in the past four years. " Messing about in trams " is a very new thing, and readers may be surprised to learn how it has grown.

Until 1948, students of tramways had confined their preservationist activities to campaigning for the inclusion of some trams in our national and local museums, but without much success. Trams are large and awkward vehicles, and although one or two operators had kept a few specimens, no one else seemed to be interested. The industry in general lacked a sense of responsibility to future generations, and it was left to the individual enthusiasts to save a few vehicles from destruction. In October 1948, acting through the Light Railway Transport League, they bought the last open-top " knife-board " tram of Southampton Corporation and found it a temporary home, then carried on to beg or buy six more trams in the next three years, setting up a Museum Committee charged with the task of starting a permanent tramway museum, something easier said than done. Not until 1958 was the right place discovered, by which time some of the trams had made three successive moves from one temporary home to another.

Quite apart from the need to preserve some vehicles for their own sake, as examples of the craftsmen's art, there was another potent reason for starting a museum for trams. Railways and roads will exist on a wide scale in the foreseeable future, and their vehicles, however old, can be given an occasional outing; but in the case of the tramway, not only were the vehicles disappearing, but the very mode of locomotion was in danger of becoming extinct. For this reason, it was realised that some of the trams selected for preservation should be grouped into a " working " museum, with a test track attached on which they could be run, so that visitors could actually

*One that got away: Morecambe Corporation's horse tram No. 1, of 1887, which was sold to Manchester Corporation for £5 in September 1926 for use in Manchester's Civic Week procession. The car was later broken up.*

ride on the cars and see for themselves what tramway travel was like. This in turn made it essential for those interested to work together in a group, for the creation of a specially-built track and power supply was beyond the reach of the average individual, and required the combined efforts and resources of many people. The first such example was the Seashore Electric Railway of Kennebunkport, Maine, U.S.A., who today have more than seventy trams, several of which are operated in summer to give rides to the public. Their example has been followed by several other American groups, and was the direct inspiration for what has been done in Britain.

In 1955, the few trams mentioned earlier were transferred to the newly-formed Tramway Museum Society, which in 1959 took a lease of some land and buildings at Cliff Quarry, Crich, in Derbyshire, with the object of founding a tramway museum on the lines of those in America. Today, the project is about halfway to completion; about 750 yards of track has been laid (all by volunteer labour), new buildings have been erected to house about twenty trams, vehicles have been brought from all over Britain, and a good stock of parts acquired to complete and extend the layout and (eventually) to make it possible to operate the vehicles, once they have been housed. Trial runs have already taken place with a horse tram, and although the display still resembles a construction-site rather than a museum, visitors can walk around and see trams representing most of the types used in Britain during the past forty years. Another collection of tramcars has been built up by the Middleton Railway

Preservation Society in Leeds, and tramway sections have been added to three present and future transport museums, those of Belfast Corporation, Glasgow Corporation, and the Museum of British Transport administered by British Railways. Not all these vehicles are yet on display, but a complete list is given in Appendix I.

The purpose of this book is to select and portray a representative sample of the tramcars which have been kept as actual or potential museum exhibits, choosing them so as to show the main lines along which the British tramcar developed during its century of existence (the first British tramway to be built as such commenced work at Birkenhead in August, 1860). The story is brought up to 1952, for the tram's disappearance has been so complete that even quite recent vehicles have been withdrawn and put in museums, with many years of potential life unrealised. This is not the place to speculate on the reasons for the tram's disappearance, but it has meant that those concerned in selecting trams for preservation have had to disregard the kind of yardstick which in other fields would classify a vehicle as " Veteran " or " Vintage " according to the year in which it was built or registered. In other spheres, a vehicle does not usually rank for preservation until it verges on the obsolete, but if this definition had been adhered to in the case of tramcars, the later years would have been left unrepresented. This explains the inclusion in this book of vehicles younger than many present-day buses and coaches, both in the text and in the accompanying list.

Within the limits of 64 pages, it is not possible to show every British tram that has been kept, though I have tried to give nearly all a mention in the text, and all have a place in the list on pages 56–61: if any more exist, complete and in working order, I shall be very glad to hear of them. Amendments will no doubt become

*Track-laying in progress at the Crich Tramway Museum in the summer of 1962, showing a hand-operated crane purchased from Sheffield Corporation.*

necessary from time to time, and these will be published at intervals in *Modern Tramway*, the monthly journal produced jointly by Ian Allan Ltd. and the Light Railway Transport League, so that readers can amend their copies. The cars are portrayed in chronological order, with slight adjustments to give continuity of vehicle evolution, so that it is not necessary to repeat in this Introduction the stages by which the tram evolved. The classification adopted for museum purposes is basically one by motive power (horse, steam, cable, electric), with the electric cars subdivided into four distinct periods covering approximately the years 1883–93 (" Experimental "), 1894–1902 (" American "), 1903–1930 (" Traditional ") and 1931–61 (" Modern "). This method is that adopted by the Museum of British Transport, who hope shortly to publish a booklet on the evolution of the British tramcar in which these terms, their significance and their application will be defined as part of a general survey of the subject. Suffice it to say here that the " American " period in our electric tramways refers to the years during which almost all tramway electrical equipment and most mechanical parts were imported from America, prior to their large-scale manufacture in Britain.

The dates given in the list of vehicles are the year in which the vehicle was first built, but it must not be assumed that the vehicle in its present state represents the standard practice at that date, for many have been rebuilt so extensively that it has proved impossible to follow normal museum practice and return them to the form intended by their original designer. Others are intended for eventual re-conversion when workshop facilities (and money) are available, and this explains the retention—particularly at the Crich tramway museum—of several duplicate and near-duplicate exhibits. The traditional British tramcar was a craftsman-built timber-bodied vehicle which lent itself rather too well to partial rebuilding, and in later years the trams which remained in original state were far outnumbered by those which had been altered, often more than once. Other duplication in the tramcars chosen for preservation is explained by the need to create a reserve of vehicles while the chance exists, so that the tram may be given a proper place in any future transport museum that may come into existence; American experience suggests that we may one day see the emergence of " folklore parks " created from one or two country estates, with antique forms of transport as part of the attractions. Certainly the chance to ride on the vehicles attracts more visitors than the ability to study them in museums.

Finally, I should like to thank all those fellow-enthusiasts and fellow-members of the Tramway Museum Society who have provided

data and photographs for this book. Apart from two deliberate exceptions on pages 5 and 35, every vehicle illustrated in these pages still exists, and I have given preference to pictures of these same vehicles taken when they were still serving the public and before taking up their present role. This has not been easy, for if one tram is kept of a class of one hundred, the chance of finding a photograph of that particular vehicle is diminished in the same proportion, and some of those now preserved have proved extraordinarily elusive; examples are London Transport 2085 and 2099, Birmingham 395 and Belfast 357. I am grateful to the Editor of *Modern Tramway* for permission to reproduce material from that journal, and am similarly indebted to the Editor of the Tramway Museum Society's historical quarterly *Trams* and to the Editor of *The Tramway Review*. The list of British Museum Tramcars reproduced on pages 56–61 is the official list maintained by the Tramway Museum Society, corrected to March, 1963, and I am grateful to the Society for allowing it to be reproduced in this form.

*April 1963.* J. H. PRICE

# *Acknowledgments*

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*Britain's oldest tramcar is Ryde Pier Tramway No. 3 of 1867, now preserved in the Hull Municipal Transport Museum. No. 3 was hauled by horses until 1886, and later served as a trailer for the electric and petrol-driven trams until withdrawn in 1935.*

# *THE VEHICLES*

## *Mr. Train's Trams*

THE first street trams to run in Britain (1860–62) were imported in parts from America and assembled at Birkenhead; they were brought over by George Francis Train and resembled those in his native Philadelphia. George Starbuck, an associate, then set up a "tramcar manufactory" at Birkenhead, and built horse trams to the same general pattern for operators in Britain and on the Continent, many of them with the typically British addition of a seat along the roof. One of these cars, built in 1869, is preserved in the Cinquantenaire Museum in Brussels, and the Ryde Pier tram shown on page 9 was also of pure Starbuck design. Copenhagen tramways also began with Starbuck double-deckers, and these were copied by a Hamburg builder in 1865 for the first tramway in Berlin, from Charlottenburg to the Brandenburger Tor. One of the 1865 Berlin cars (pictured above) has been kept, its canvas awning reduced in height by some 2 ft. to clear the present overhead wires in the depot. It is the oldest tram in Europe, and the oldest double-decker in the world.

## *Sheffield Horse-Car*

THE first British trams were drawn by two horses, the use of smooth rails instead of a rough road surface enabling them to draw a large tram instead of a small omnibus. A small tram, however, would need only one horse (except on hills), and when this was realised, many towns changed to light one-horse cars, usually single-deck, such as that shown above. Sheffield Tramways Company's car No. 15 was built by Starbuck in 1874 for £200, and weighed only 29 cwts. unladen. Despite this, it was strongly built, and after the tramways were taken over by Sheffield Corporation and subsequently electrified, No. 15 became an electric breakdown car. In 1946 it became a horse tram again for Sheffield's fiftieth anniversary of municipal transport, and in 1959 No. 15 was presented to the Tramway Museum Society for their museum at Crich. It revisited Sheffield for further ceremonial duties in 1961, when it was repainted in the original red, brown and cream Corporation livery of 1898, with the word " Brightside " to show the route on which it ran. No. 15 is now back at Crich, ready to carry visitors up and down the first quarter-mile of track.

## *Douglas Horse Tram*

DOUGLAS, Isle of Man, possesses a unique attraction; the last traditional horse tramway in Europe, perhaps in the world. Each year from Whitsun to September you can hear the half-forgotten jingle of harness, clip-clop of hooves and subdued rumble of flanged wheels along the Promenade, and ride on cars which despite modern features such as roller bearings, spring traces and battery lighting have conserved the traditional form. Ten are open toastracks, six more have a roof added, and seven have a roof and bulkheads, like No. 45 featured on page 3. There are also five single-deck saloons and three " convertibles ", but up to 1948 the Corporation also ran some double-deckers, and one of these was presented in 1955 to the British Transport Commission for their future museum. This car, No. 14, was built in 1883 by the Metropolitan Railway Carriage and Wagon Company of Saltley, Birmingham, and spent the first three years of its working life in South Shields, until sold with five others to Douglas.

## *The Fintona Tram*

THE Douglas horse trams have the narrow track gauge of 3 ft. 0 in., but the line shown above went to the other extreme, the Irish railway gauge of 5 ft. 3 in. Until 1957, the Great Northern Railway of Ireland had a $\frac{3}{4}$-mile branch from Fintona to their Enniskillen-Omagh line, and used a horse tram to give connections with the trains. The car, No. 381 in their carriage stock, was divided into two saloons, officially first and second class, with a knifeboard seat for third-class passengers on top. After surviving a threatened re-bodying in 1953, the 74-year-old tram eventually made its last trip on 30th September, 1957, not because it was obsolete, but simply because the Northern Ireland Government had closed the connecting railway. The car was towed away to Belfast behind a goods-engine, and is now in the safe keeping of the Belfast Transport Museum.

## *Cable Trams*

MOST British tramways were worked by horses, steam or electricity, but six operators used cable haulage, with a wire rope running in a conduit below the track, which could be picked up or released by a gripper suspended from the car. No full-size cable cars survive, but Edinburgh Corporation, who for many years had Britain's most extensive cable-car system, have a fine 12-inch gauge model of Edinburgh cable car 81 in their museum at Shrubhill Works, together with a smaller model to show how cable trams worked; a short section of Edinburgh's cable tram track has also been kept intact at Waterloo Place. Cable cars still run at San Francisco, U.S.A., but you can get a good idea by going no further than North Wales, where the same system of hauling trams by a cable in a conduit is used on the lower part of the Great Orme Railway at Llandudno, which is worked as a street funicular.

## *Mekarski Compressed-Air Tram*

ANOTHER form of mechanical traction used in pre-electric days was compressed air, carried in a reservoir recharged at the terminus and fed through a reducing-valve to a set of cylinders and gear similar to that of a two-cylinder steam locomotive. Its use in Britain was short-lived, but the pioneer work of Monsieur Mekarski, director of the tramways of Nantes, was followed up in at least seven cities of France (including Paris), and survived for nearly forty years. When the last compressed-air trams were withdrawn at Nantes in 1917, one (No. 22 of 1879) was put aside in Doulon depot, and is now at the Paris Transport Museum, where it shares the stage with a Glasgow tram and a London trolleybus. The open platform, boarded from the back instead of the side, can still be seen on the older Paris buses.

## *Portstewart Steam Tram*

THE success of steam traction on railways led naturally to similar proposals for tramways, but development was hampered by restrictive legislation. After 1880, however, steam trams came into general use in the Midlands and the North of England, and served until displaced by electric trams after 1901. The urban steam tramways were all later electrified, but a few rural lines continued to carry passengers until the nineteen-twenties, one of them being the Portstewart tramway in Northern Ireland, When this line closed in 1926, two of its three Kitson locomotives were stored away for preservation; No. 1 of 1882 was presented in 1939 to Hull Transport Museum, and No. 2 of 1883 is in the collection at Belfast. Unfortunately, no one thought to keep one of the large double-deck cars which British tram engines drew; perhaps, one day, someone will build a replica.

## *Wilkinson Tram-Engine*

TO comply with a Board of Trade rule that steam tram engines should not emit any visible smoke or steam, most were fitted with an air-cooled condenser on the roof, and some had an exhaust superheater or steam-drier to render the exhaust invisible. The latter device was patented by William Wilkinson of Wigan, and two vertical-boilered Wilkinson tram engines built by Beyer Peacock & Co. have recently been preserved after a lifetime of service as works' shunters. The Museum of British Transport have an 1886 engine of the Bury, Rochdale and Oldham Tramways Company, and the Crich Tramway Museum have an 1885 engine built for the New South Wales Government Tramways in Australia but used for 68 years as Beyer Peacock shunter No. 2. This photograph, taken by the late W. H. Whitworth, shows No. 2 with its railway buffers and couplings soon after it was last reboilered, in 1930. The motion is carried to the wheels by means of cog-wheel gearing.

## *Volks Electric Railway*

ELECTRIC traction, the most popular motive power for tramways, arrived in Britain in 1883, some years before the overhead trolley method of current-collection was available. The method used at first was two-rail or third-rail power supply, but this was too dangerous to be used in streets, and the first electric tramways were laid on private right-of-way, fenced off from the road. The first was Volks Electric Railway at Brighton, opened on 4th August, 1883, and this line (reconstructed in 1884 and extended in 1901) is still at work today, using the original type of stud controller. The oldest cars are Nos. 8 and 9, built by the Falcon Engine & Car Works in 1890 for the Southend Pier Tramway with Crompton electrical equipment, and sold to Brighton Corporation in 1949 when the Southend Pier Tramway received the modern trains which work it today. This picture shows an ex-Southend car in front of the car shed at Paston Place.

## *Two Irish Pioneers*

HARD on the heels of Magnus Volk's line came the Giants Causeway tramway in Northern Ireland, whose regular electric service commenced in November, 1883 after some months of trials. Current collection was by third-rail, with a steam engine for use in the streets of Portrush until the overhead trolley system was adopted in 1899. When the line closed in 1949, the cars were auctioned for use as sheds and summer-houses, and one (trailer No. 5) was later rescued for the newly-formed Belfast Transport Museum. This museum also has a car from Ireland's second electric tramway, the Bessbrook & Newry (seen behind No. 5), which dates from 1885 and still has its original trucks, motor and chain transmission, though the body is a second-hand one dating from 1900. The original Bessbrook cars were equipped by Mather & Platt of Manchester, at whose works this car was exhibited until its present home became available.

## *Blackpool Conduit Car*

IF electric trams were to run in streets, they could not use a " live rail "—unless it was buried in a central channel with a slot for the car's current-collector. This method was first used by Mr. M. Holroyd Smith, who in September, 1885, opened an electric tramway along the Blackpool Promenade from Station Road to Cocker Street. The original cars each had one 250-volt motor driving the two axles by chains, but in 1899 the line was converted to the overhead trolley system at 500 volts, and the cars re-equipped and re-trucked. The 1885 vehicles remained in service until about 1912, after which one was kept for departmental use and was eventually restored in 1960 to run in connection with the 75th anniversary of electric tramways in Blackpool, proudly (and correctly) inscribed " The First Electric Street Tramcar in England." In 1962 the Corporation presented it to the Tramway Museum Society, who have arranged its display on loan in the Museum of British Transport.

## *Manx Electric Railway*

A CHEAPER alternative to the underground conduit was overhead-wire supply with the Hopkinson bow collector, still used on the Snaefell Mountain Railway (see cover). This device was used from 1893 on the Douglas & Laxey Coast Electric Tramway, now part of the Manx Electric Railway owned by the Isle of Man Government. Trolley poles replaced the bows in 1897, but the original cars still survive; the picture above shows No. 1 of 1893 and saloon trailer No. 59 of 1895, with a cross-bench car of 1906 in rear. The average age of the 48 cars is now 62 years, but most of them only run in summer, and are good for some years yet. The 3 ft. gauge Manx Electric line runs for seventeen miles along the island's scenic east coast, and provides Britain's finest and longest tram-ride. Its full history, together with that of its mountain branch and a present-day survey, is available in three 1s. booklets on sale at the railway's offices in Douglas.

## *Douglas Head Marine Drive No. 1*

SIXTY-SEVEN years ago, some men set out to build an electric tramway along the wild, rocky south coast of the Isle of Man, a thin lifeline of Victorian civilisation suspended mid-way between sea and sky, with a towering wall of rock on one side and a sheer 200-ft. drop to the breakers on the other. Defying nature, they cut a thin shelf in the rock and built their tramway, and ran it for many a year until, in 1939, it closed and became a legend. It left behind a complete depot full of old, forgotten open trams, in a spot so remote that not even the scrap-man could reach them, but in June 1951 some of us rescued one of these trams and took it to Douglas, from where it was eventually transferred to the Museum of British Transport. We were only just in time; two years later we happened to walk again along the deserted drive, and this time there was nothing but the waves and the sea-birds. The depot, and the other fifteen trams, had vanished so completely that they might never have been.

## *The Fleetwood Rack*

PURELY American in descent, though British in design and construction, were the cross-bench cars of the Blackpool and Fleetwood Tramroad Company, standard-gauge versions of the open cars still used in the Isle of Man. The first ten were built in 1898 by G. F. Milnes & Co. of Birkenhead and ran until 1939, after which five survived as engineering-cars or snowploughs. In 1960, the last of these (the original No. 2) was restored to 1898 condition in connection with Blackpool tramways' 75th birthday, and is now in the Tramroad Company's livery of chestnut-brown and white, with brown trucks, red kicking-board and white valance. The Corporation also restored an enclosed Blackpool & Fleetwood car, saloon car No. 40 of 1914, which appears in the background on page 20. Both cars were presented in 1962 to the Tramway Museum Society, and No. 2 will be one of the first to carry passengers at the Crich museum.

## *Room and Kitchen Car*

ANOTHER new electric tramway in 1898 was that of Glasgow Corporation, whose trial route from Mitchell Street to Springburn was worked by 21 centre-entrance single-deckers, known colloquially as " But and Ben " (Room and Kitchen) cars. One compartment had glazing and longitudinal seats, the other (for smokers) had " garden seats " and open window-spaces. The reversible " garden seat " had appeared on the top decks of horse and steam trams from 1886 onward, replacing the older knifeboard, and Glasgow's own horse tram of 1894 (No. 543) is a good example. This picture shows horse-car 543 and electric single-decker 672 outside the Corporation's Coplawhill car works, part of which will eventually be opened as a transport museum. No. 672 became a departmental vehicle in 1905 and was used for some 35 years to test the underground feeder-cables, until recently restored to its original 1898 condition. Both cars ran in Glasgow's closing procession on 4th September, 1962.

## *Glasgow Standard Car*

THE success of their trial route induced Glasgow Corporation to electrify their entire system and build their own electric trams. The design they chose was a 5-window open-top double-decker on a Brill 4-wheel truck, and by 1924 more than a thousand were in use, fitted by that time with top deck covers. Many enjoyed working lives of fifty years or more, and must have paid for themselves several times over. Six have been kept as relics, Nos. 22 and 812 at the Crich Tramway Museum, Nos. 779 and 1088 by Glasgow Corporation, and No. 488 by the Paris Transport Museum at Malakoff, while the sixth, No. 585, will soon be on show in the new wing of the Science Museum, South Kensington. A peculiarity of Glasgow trams for many years was the practice of painting the upper decks in different colours to distinguish the route, and four of these colours (red, green, white, blue) are represented among the survivors. This picture shows No. 585 leaving Glasgow for London on 6th November, 1962.

## *Newcastle Class "F" Car*

IN early years, many American tramways maintained two fleets of cars, open cars for summer use and closed ones for winter. Both sometimes used the same trucks and equipments, the spare bodies staying in the depot when not required. Newcastle upon Tyne Corporation took up this idea, and in 1902 bought thirty open-sided single-deck car bodies for summer use, but before most were ever used, different ideas prevailed and all thirty were rebuilt as open-top double-deckers, seating more than eighty passengers apiece. In 1949 the last survivor (No. 102) was preserved by a group of enthusiasts, the writer included, and is now displayed at the Montagu Motor Museum at Beaulieu, Hampshire, on loan from the Tramway Museum Society. The Class F cars were especially useful in moving crowds of racegoers to and from Gosforth Park, and this picture shows No. 102 and four others on a race day in Gosforth Park in 1946.

## *Hill of Howth*

OUTWARDLY similar to Newcastle 102, but very different in origin, were cars 9 and 10 of the Hill of Howth tramway near Dublin. Built by G. F. Milnes in 1902, these two cars were designed for tourist traffic, with high railings to allow sightseers to stand upstairs, and with a central knifeboard seat in the saloon to allow lower-deck passengers to watch the passing scene without straining their necks. The unusual trucks were however too prone to derailment, and while the other eight cars became bent with age, Nos. 9 and 10 slept undisturbed in the depot for some 350 days per year, with never a scratch on their varnished teak. When the Hill of Howth tramway closed in 1959, No. 9 (seen above in 1953) was kept by the Transport Museum Society of Ireland and No. 10 went to Crich; three of the other cars were also kept, No. 2 in California, No. 3 in Dublin and No. 4 in Belfast. The Dublin society has also kept the repair car (No. 11), so the scrap man only got five cars out of eleven.

## *Southampton Knifeboard Tram*

IN most towns, knifeboard top-deck seating disappeared with the horse trams—if not earlier—but Southampton Corporation were faced with the problem of running trams through the low arch of the mediaeval Bargate, and for years operated specially low-built cars with knifeboard seating upstairs. One has been preserved—No. 45, built in 1903 and thrice rebuilt later, but still preserving its traditional form. Its purchase for £10 in 1948 marked the start of the present Crich museum scheme, but until this museum was founded (in 1959), No. 45 had to spend several years in temporary homes, first at Leeds and Blackpool and then in the Montagu Motor Museum at Beaulieu. In October, 1960, the writer travelled with No. 45 on its final 204-mile journey from Beaulieu to Crich, where it is seen arriving in this picture.

## *Blackpool "Dreadnought"*

IN 1898, the Blackpool Corporation took delivery of two large open-top bogie trams with Mr. J. Shrewbury's patent entrance, an end-loading double-stair layout which proved very handy for quick loading and unloading on the Promenade, where most passengers preferred to travel on the top deck. Ten more cars arrived a year later, and a final batch of eight in 1902. All twenty had the same unusual trucks made up of bar sections bolted together, Meccano-fashion, with 30-inch wheels and a 5ft. truck wheelbase. The Shrewbury-entrance cars were for years Blackpool's main standby for carrying holiday crowds, and their nickname " Dreadnoughts " probably referred not so much to their battleship-like appearance as to their capacity for dealing with any size of crowd encountered; they seated 86 passengers, 37 inside and 49 on top. All twenty were withdrawn in 1935, but No. 59 was kept as a tool-store. In 1960 it was restored for passenger service, finished in the Corporation's former livery of crimson and cream with varnished-teak side panels, and has since been presented by Blackpool Corporation to the Crich Tramway Museum, where it will no doubt have a long and useful career.

## *Belfast Corporation 249*

FOR many years, the most common type of British tram was the three-window open-top double-decker, usually mounted on a Brill 21E 4-wheel truck and powered by two 25 h.p. electric motors. Yet of some 3,500 cars built to this pattern, hardly any survive, and those that do are mostly somewhat altered from their original pattern. The Museum of British Transport has a London County Council example of 1903, now being restored, but the best example is Belfast Corporation No. 249 of 1905, pictured above in 1953 outside Sandy Row Depot, where it served for many years as a works car. No 249 was built by the Corporation to replace a converted horse-car damaged in a workshop fire, and may include parts of the original, though these are not evident. The car is now in the Belfast Transport Museum, together with a handsome " Chamberlain " type double-decker of 1930.

## *Cardiff Water Tram*

FOR many years most British tramways had one or more " works cars," vehicles specially built for non-passenger duties such as carrying sand or stores, removing snow from the tracks, spraying water, or grinding out the corrugations that formed on the surface of the rail. One such car was Cardiff Corporation 131, built by the Brush Electrical Engineering Company in 1905, as a rail-cleaning car with a large central water-tank, and converted in 1920 to a " scrubber car " by fitting a set of Hurst Nelson track-brake gear to press carborundum blocks down on to the track. The car would be driven back and forth over the corrugations, dousing the tracks with water from the tank as it worked. In 1950 this car was presented to the enthusiasts who later founded the Crich Tramway Museum, and after some years in store was the first tram to arrive at Crich (8th May, 1959). In this picture, No. 131 is shown stored at Allensbank Works, Cardiff, in 1951, with the tarpaulins removed for the photographer.

## *West Ham Balcony Car*

ONE of the nicest tramway exhibits in the Museum of British Transport is London Transport tram No. 290, built in 1910 as No. 102 of West Ham Corporation Tramways. Although most London trams were large bogie cars, the six East London systems (Barking, Ilford, East Ham, West Ham, Walthamstow and Leyton) relied for years on 4-wheel cars like 290, though 290 itself was not typical until rebuilt in 1922 (originally it had six opening side windows and a radial-axle truck). Withdrawn from service in 1938, No. 290 then spent twelve years in New Cross Gate tram-depot, but in April, 1952 (shortly before trams ceased to run in London) the car was given a thorough overhaul and repainting at London Transport's Charlton repair works. It was then photographed (above) and taken to Reigate bus garage for storage, until finally transferred to Clapham.

## *London E/1 Class Car*

THE principal operator of tramways in London, in the days before London Transport was formed in 1933, was the London County Council, most of whose lines were equipped on an underground-conduit system of current collection because of aesthetic objections to overhead wires. Today, the L.C.C. Tramways are remembered mainly for their very cheap fares, but in earlier years they led the way in many other respects, notably in the design and equipment of their vehicles. Bogie cars with fully-enclosed top decks arrived in 1906, magnetic track brakes allowed relatively fast running, and the L.C.C. Tramways were among the first to adopt really good lighting and comfortable transverse swing-over cushioned seats. Their largest class, the E/1, is represented by No. 1025 in the Museum of British Transport; this car, seen here passing Catford bus garage in November, 1951, was built by the L.C.C. in 1908, using trucks and components by Messrs. Hurst, Nelson & Co. of Motherwell.

## *Llandudno & Colwyn Bay No. 6*

ALTHOUGH most inland tramways eventually followed London's example and fitted their cars with top covers, seaside towns generally preferred the open top, which in summer would attract many pleasure-riders. One such town was Bournemouth, and when they ceased to run trams (in 1936), the Corporation sold ten cars to the Llandudno and Colwyn Bay Electric Railway in North Wales, who ran them for another twenty years on a delightful coastal route that wandered across fields and at one point ran so close to the shore that the track was eventually undermined by the sea. When the line closed, one of the ex-Bournemouth cars was bought by Mr. A. Richardson and presented by him to the B.T.C. for the Museum of British Transport. The sensation of riding these cars can still be enjoyed at Eastbourne, where two similar but smaller vehicles are in use throughout the summer on a 2 ft.-gauge line at Princes Park.

## *The "Burnley" Truck*

MANY British trams, including those shown on pages 27, 33 and 34, were mounted on "maximum-traction" bogie trucks with one driving and one guiding (or "pony") axle, thus combining bogie-car riding qualities with the simplicity of two-motor equipment. The proportion of weight carried on the two axles varied in different designs, and the highest proportion of adhesive weight was achieved in the "Burnley" type truck, devised by the manager of the Burnley tramways, Mr. H. Mozley. In this truck, the guiding axle was held down by a coil spring in compression, to deter it from jumping the track. The largest single user of these trucks was the Birmingham Corporation, one of whose Burnley-trucked bogie cars is seen above, and a sample truck is on display in the Corporation's Museum of Science and Industry at Newhall Street This museum also has a complete 4-wheel Birmingham tram of 1912, No. 395, a typical example of the tall, narrow construction made necessary by Birmingham's track gauge of only 3 ft. 6 in.

## *Grimsby and Immingham 14*

IN 1912, the Great Central Railway opened an electric light railway to link their new dock at Immingham with the town of Grimsby, from which the dock undertaking drew most of its labour force. The cars they obtained were the longest single-deck trams ever used in Britain, 54 ft. 2 in. over fenders, with 72 seats including eight on tip-up seats in a central luggage compartment. Eight such cars, and four smaller ones, were built by the Brush Company at Loughborough in 1911–13, and four more to the same design emerged from the Great Central Railway works at Dukinfield in 1915. In 1951, the fleet was increased by the arrival of eighteen second-hand cars from Gateshead, the last British trams to run on " reversed " maximum-traction trucks with pony wheels outward, and when the Immingham line finally closed in 1961 one of each type was earmarked by the Museum of British Transport for preservation. This picture shows the surviving Great Central type car, No. 14, at Kiln Lane crossing in 1959.

## *Gateshead B.E.T. Car*

IN the early years of electric tramways, many existing British systems or concessions were bought up by the British Electric Traction Company, which eventually operated some three dozen electric tramways. The earlier B.E.T. systems displayed a marked fondness for single-deck cars, and although most of the B.E.T. tramways were replaced by buses thirty years ago, it is fitting that the last B.E.T. street tramway system, at Gateshead, continued to use typical B.E.T. single-deck cars (because of a low railway bridge) right up to the time of closure in 1951. Most of the long bogie cars were sold to British Railways for their Grimsby and Immingham Electric Railway, as previously mentioned, and a 4-wheel car, No. 52 of 1920, was bought by Mr. William Southern and kept in his garden, until he presented the car to the Crich Tramway Museum in 1960. No. 52 is quite similar to the small fast single-deckers built by the central B.E.T. works at Tividale, Staffs., and this picture shows it being hand-shunted at Crich, before work began on its restoration.

## *A Lesson from Dublin*

WHEN the Dublin tramways closed in 1949, local enthusiasts bought three of the cars for museum purposes, and a plot of land on which to build a museum. There the money ran out, and instead of protecting them, the owners left the cars to suffer the depredations of the local children, who gradually stripped them of all removable parts until nothing was left but the bare shells and the trucks. This picture shows two of the cars, Nos. 129 and 328, ten years ago, before the worst of the damage occurred. Fortunately, other Dublin tram bodies were sold for use as bungalows and caravans, and the Transport Museum Society hopes to recover two to replace the cars it has lost, mounting them on the existing trucks, though this will be a costly and time-consuming exercise. British enthusiasts also lost three trams in this way—two at Liverpool, one at Paisley—and the moral is clear; trams are only safe on enclosed premises, or out in the country where city children are less likely to range.

## *The Tram that went to America*

IN September, 1954, Blackpool Corporation received a letter from Mr. Dwight B. Minnich of the Seashore Electric Railway of Kennebunkport, Maine, U.S.A., asking whether they could acquire a typical double-deck British tram. When they recovered from their surprise, they realised that Blackpool could gain some splendid publicity by presenting the Seashore trolley museum with one of their spare double-deckers, and selected No. 144, built in their own workshops in 1924. On 11th March, 1955, No. 144 left by road for Liverpool, and next morning was hoisted by floating crane on to a cargo ship for Boston. By mid-April the car was safely installed at the oldest and largest American " trolley museum ", where today it is often run under its own power to carry visitors. Three similar cars have been kept in Britain, No. 40 (open-balcony) and 49 (enclosed ends) by the Tramway Museum Society, and No. 147 for a future Museum of Lancashire Life in Salford.

## *Beeston Air-Brake Tram*

ON routes with steep hills, the tram was able to use the rails for extra braking, something no other vehicle can do. In its usual form, this was achieved by a mechanical " slipper brake " with wooden or cast-iron blocks screwed down by a hand-wheel on the platform, but in later years this track brake was sometimes applied by compressed air, as in Sheffield and Dundee. In Leeds, only one route (that to Beeston) was steep enough to need this brake, and a special batch of enclosed 4-wheel cars known as the " Beeston Air-Brake " type was introduced from 1924, one of which (No. 399) later served as a depot shunter and is now preserved at the Crich Tramway Museum; it is seen here at Beeston terminus in October, 1950, with the Fischer bow collector which replaced the original trolley pole in 1935. The Crich museum also includes a somewhat similar car (No. 345) built in 1921 with open balconies, but altered about 1936 in an attempt to conform with later designs.

## *Bradford 104*

ON tramways with a track gauge of 4 ft. 0 in. or less, the Ministry of Transport would not allow the use of all-enclosed 4-wheel double-deck cars, and several towns such as Bradford and Coventry were therefore obliged to build new cars to what was outwardly an obsolete design. This, however, bestows a true period charm on the best-known survivor, Bradford Corporation No. 104 of 1925, which was sold to a sports-stadium in 1950 and then rescued by Messrs. J. A. Pitts and J. S. King, who bought missing parts from Sheffield and arranged for the car to be rebuilt at their expense in the Corporation Transport workshops. In July, 1958, No. 104 took the road once more, on a length of tram-track next to Thornbury trolleybus-depot, and drawing current from the trolleybus wires. The car is now Corporation property, but the sponsors retain the right to run it up and down occasionally, when visitors can ride (and drive!) the car in return for a suitable cash contribution.

## *Bailie Burtt's Tram*

IN 1925, the Convenor of the Glasgow Corporation Tramways Committee, Bailie Burtt, paid a visit to the U.S.A. and found that streetcar operators there were rapidly forsaking the traditional wooden cars in favour of long high-speed steel ones, often with separate entrances and exits. The traditional Glasgow tram was not built for speed, and was losing traffic to pirate buses. The Corporation built an experimental single-deck tram that would show the buses a clean pair of heels, and this car, No. 1089, appeared in August, 1926. Curve clearances restricted it to 32 ft. 6 in. long, with 36 seats, and the design was not repeated, but No. 1089's new features were copied in many later trams; it was the first British tram to make full use of the possibilities of steel bodywork, with straight sides that allowed four-abreast seating, and the first in Glasgow to have four motors and to use air-brakes. No. 1089 ran until 1961, mainly at shipyard rush-hours, and is now in store for Glasgow's future transport museum.

## *Glasgow 1100 and 1115*

INSTEAD of building more cars like No. 1089, the Glasgow Corporation decided to copy London and build steel-framed maximum-traction bogie cars, fifty of which arrived in 1928. Almost the whole of their working lives were spent on the long, straight cross-city routes north of the Clyde, and these cars more than any others are associated with the industrial scenery of Clydeside—shipyards, engineering works and tenements, with here and there a row of shops. Both the surviving examples were built by Hurst Nelson & Co. of Motherwell, with trucks by the Kilmarnock Engineering Company, but whereas No. 1115 (shown above) is structurally unaltered, No. 1100 was used in 1940 for a rather desperate experiment. The traditional timber-built tram could be kept up to date by judicious rebuilding, but when Glasgow tried this with a steel-bodied car—No. 1100—they soon found that the results did not justify the cost. No. 1100 remained the sole example, and the rest were kept as they were.

## *Blackpool "Pantograph" Car*

IN 1920, Blackpool Corporation took over responsibility for the interurban tramway to Fleetwood, on which traffic soon began to grow rapidly as the result of housing development. The eventual result was an interesting and unusual batch of new cars, ten saloon trams built by the English Electric Company at Preston in 1928, with two 50 h.p. motors, air brakes, and upholstered double transverse seating, made possible by building out to the extreme width of 7 ft. 6 in. allowed by the Fleetwood line's loading-gauge. When new, these cars took current by a small pantograph on a steel tower, but this collector was replaced by trolley pole and wheel in 1933, mainly because flying sand adhered to the graphite and produced an uneconomically rapid rate of wear. Most of these cars remained in use until 1960; one is now Blackpool's Permanent Way gang car, another is a trailer for use in the Autumn Illuminations, and a third survivor (No. 167, seen above) was donated in 1961 to the Tramway Museum at Crich.

## *Train or Tram?*

WHEN the Swansea and Mumbles Railway celebrated its 150th birthday in 1954, *The Times* wrote that while Swansea folk called the cars " trains ", they looked remarkably like trams to anyone else. In fact they were Britain's largest tramcars (106 seats), and their only "railway" features were details such as air whistles, air-operated folding doors, deep wheel-flanges, pantograph collectors, " dead-man's-handle " controllers, and electro-magnetic contactor control to allow the cars to run in multiple-unit pairs. The thirteen cars were built by the Brush Company at Loughborough in 1928, and took over from steam engines which had hauled trains of open-top cars around Swansea Bay for the previous half-century. When the line closed, in 1960, a replica horse-car produced for the 1954 anniversary was bought by the Museum of British Transport, and electric car No. 2 was acquired by the Middleton Railway Preservation Society at Leeds, who keep it on a private siding at a local foundry.

## *Only one in captivity*

WHEN London's tramways finally closed in July, 1952, many enthusiasts were saddened by the thought that although two pre-first-war cars were to be kept, none of the later L.C.C. cars (classes E/3 and HR/2) were to join them. Just in time, Peter J. Davis bought an HR/2 class car, No. 1858, and arranged for it to be placed on show at Chessington Zoo, in Surrey. Twelve of us dug a pit in a paddock vacated by a bison, laid a piece of track, and on 2nd October, 1952, No. 1858 was brought by road from Charlton and gently lowered on to the rails where it remains today to fascinate a new generation of London children who may never have seen a tram. 1858 was one of fifty cars bought by the L.C.C. Tramways in 1930 to work the steep Dulwich routes, and is fitted with hand and magnetic brakes and a special electric " run-back " brake for extra safety on hills.

## *Leeds "Horsfield" Tram*

ONE of the neatest British tramcar designs, mid-way between traditional and modern, was the " Horsfield " class at Leeds, of which four prototypes were built by the Corporation in 1930 and a main batch of 100 by the Brush Company in 1931. Sober in outline but modern in equipment, they served Leeds efficiently for twenty-eight years, outliving two later designs, and when the Leeds tramways finally closed, three were kept for preservation. No. 202, shown above, is owned by the Middleton Railway Preservation Society, who also house No. 160 for Leeds City Museum, and the third one (No. 180) is kept at the Tramway Museum Society's site at Crich. An unusual feature was the use of two-and-one seats in the upper saloon, with a correspondingly wider gangway; this feature was also found at Sheffield, and an equivalent Sheffield car, No. 189, may also be seen at the Crich museum. A picture of this car, with others, appears on page 59.

## *The Feltham Car*

THE most fundamental programme of research into British tramcar design was that carried out by the Metropolitan Electric and London United companies in 1927–30, and resulting in the 100 " Feltham " cars of 1931; their name derived from the location of the builders' works. They were the first double-deckers to make full and logical use of steel construction, with thin sides, straight stairs, and none of the internal bulkheads necessary on timber-built cars. After several years in North and West London, the whole class moved in 1937–38 to the Streatham routes south of the Thames, until sold in 1950 to Leeds where they ran until 1959. One car, No. 2099, went to Leeds a year before the rest as a sample, and ran there with its London number, as shown above (in Middleton woods); it later became Leeds 501, and is now in the Museum of British Transport. Other cars survive in Leeds and Massachusetts, and the Crich museum has one of the prototype cars of 1929–30, a centre-entrance " Feltham " which later ran in Sunderland.

## *L.C.C. Number One*

ANOTHER London tram which went to Leeds, only to return to London as a museum-piece, was the famous L.C.C. prototype car No. 1 of 1932. No. 1 was designed as a luxury tram to attract the off-peak rider, intended for the Kingsway Subway routes where the capacity to win new traffic was greatest. New features for the L.C.C. tramways were air brakes, electric heaters, separate drivers' cabs, all-enclosed platforms with air-operated folding doors and steps, windscreen wipers, linoleum floor-covers, and really comfortable top-deck seats. No. 1 was finished in a new livery of royal blue and white with end-streamlining, and was known to the staff as " Bluebird ". The car entered service in July, 1932; a few months later, the L.C.C. tramways passed to the London Passenger Transport Board, who in 1935 decided to replace the trams with trolleybuses, leaving No. 1 as the last and most modern tram ever built for service in London.

## *Sheffield Domed-Roof Car*

THIRTY years ago, most people thought of Sheffield as a drab, industrial town—or so the Town Council feared. Looking for ways to brighten up their city, they hit on the idea of an all-cream livery for their trams and buses; they knew it would be hard to keep clean, and accepted the challenge. All new trams, and a few others, thereafter appeared in pale cream with blue bands, and when (in 1936) the traditional design gave way to the more rounded lines of the " domed-roof " cars, the result was the most handsome public service vehicle seen in Britain up to that time. Today, Sheffield buses are still mostly cream, but the domed-roof trams are gone, most to the breaker's yard at Tinsley, one (No. 264) to the tramway museum at Crich. This picture shows No. 264 at work in Sheffield in February, 1958, a perfect example of modern tramcar architecture, yet with no exaggerated streamlining.

## *Edinburgh 35*

UNTIL very recently, the standard tourist picture of Edinburgh was a rooftop view of Princes Street with the Scott Monument prominent in the middle distance and the road-centre marked by a neat line of tracks and trams. The trams were quiet, well-bred 4-wheelers in dark maroon and brown with a downswept cream band, and on their sides the dignified title " City and Royal Burgh of Edinburgh". Most were built in the Corporation's own workshops at Shrubhill, and when the Edinburgh tramways closed in 1946, one of the more recent cars (No. 35) was put aside, with other smaller items. All these are now excellently restored and displayed in a small museum nearing completion at the Corporation Parcels Department headquarters in Shrubhill Works, where you can see not only vehicles and models but also maps, photographs, track parts and permanent-way tools. There is also a genuine Edinburgh horse-bus, rescued and restored after lying derelict for years on a farm.

## *Liverpool "Green Goddess"*

ALTHOUGH no more trams like L.C.C. No. 1 were built in London, rather similar cars were built in 1934 for Liverpool, followed by more than three hundred other modern cars from 1935 to 1940. All were built at the Corporation's Edge Lane Works, and all were known—after a George Arliss film—as "Green Goddesses", in contrast with the red livery of Liverpool's older trams. In 1953–54, forty-six of the largest batch, known officially as the Bogie Streamliners, were sold to Glasgow Corporation, who ran them for another seven years, and one of these (Liverpool 869, later Glasgow 1055) is now at the Tramway Museum at Crich. The Liverpool bogie streamliners were first favourites with the enthusiast on account of their acceleration and speed, and on the fine Liverpool reserved-tracks they reached speeds which have probably never been surpassed in regular service by any tram in Britain.

## *Liverpool "Baby Grand"*

AFTER building the bogie streamliners, Liverpool Corporation's Edge Lane Works turned out a batch of one hundred modern 4-wheeled cars, with more orthodox equipment and performance. These were mounted on the Electro-Mechanical Brake Company's design of long-wheelbase flexible-axle truck, and although quite smooth-riding on good street track, would often produce a rather alarming motion when driven flat out along the sadly neglected sleeper-tracks of the immediate post-war years. They proved to be Liverpool's last trams, and when the system closed in September, 1957, No. 293 was repainted in a cream livery with green bands, black lining and silver bumpers, with the words " Liverpool's Last Tram " on each side. No. 293 was later sold for £150 to the Seashore " trolley museum " in America, becoming their 64th acquisition, and another car (No. 245, also seen above) has been kept by the Corporation at Edge Lane Works.

## *Glasgow "Coronation"*

ONE of the most exciting new tramcar designs of the nineteen-thirties was the Glasgow "Coronation" tram, so named because its first appearance coincided with the Coronation of King George VI in 1937. It was claimed at the time as " the finest short-stage passenger vehicle in Europe ", and proved outstandingly popular, so much so that the City Council decided in November, 1938 to order 600 more, at a cost of about £3,000 each. Owing to the war, only 150 were built, but four have been kept as souvenirs, one by the Corporation, one at the Crich Tramway Museum, one at the new Midland Motor Museum at Measham, and one (No. 1274, pictured above) by the Seashore Electric Railway for their museum at Kennebunkport, Maine, U.S.A. The Coronations had four 35 h.p. motors, with control by a low-voltage master controller and a set of electro-pneumatic contactors, fed from the same air system as the brakes.

## *Glasgow "Cunarder"*

TO include a vehicle built in 1952 in a "Veteran and Vintage" book may seem odd, but there are no more trams in Glasgow streets today, and No. 1392, the last of a batch of 100 cars, enjoyed a working life of only 10½ years; its last public appearance was in the closing ceremony on 4th September, 1962. These cars were a post-war development of the "Coronation" type, and were known officially as "Coronation Mark II", but soon attracted to themselves the unofficial name of "Cunarders". Their significance in transport history is that of being the last new double-deck tramcar design ever evolved, and it is fitting that the last one (1392) has joined the earlier trams in the Museum of British Transport to portray the story of the British tram in all its stages. Newer trams—all single-decked—can be seen in daily use at Blackpool, and there are plenty more abroad, but nowhere in the world is there a double-deck tram built more recently than Glasgow 1392.

# *Appendix I*

## LIST OF PRESERVED BRITISH TRAMCARS (MARCH, 1963)

*This list has been compiled by the Tramway Museum Society, and covers all British tramcars known to be preserved either in Britain or abroad, except for tramcar bodies on which no restoration work has been carried out. Cars which have had more than one owner are generally shown in the form to which it is intended they shall be restored, where decided; this may differ from their present state. The Society maintains a register of vehicles, and will be pleased to receive any additions or amendments. An asterisk against the location denotes that the vehicle is in store and not at present available for inspection. The following abbreviations are used:*

AMTUIR—Association pour le Musée des Transports Urbains, Interurbains et Ruraux (Paris Transport Museum, Malakoff)
B.R.—British Railways Board (Museum of British Transport)
M.R.P.S.—Middleton Railway Preservation Society
M.T.H.C.—Manchester Transport Historical Collection
S.T.M.S.—Scottish Tramway Museum Society
T.M.S.—Tramway Museum Society
T.M.S.I.—Transport Museum Society of Ireland
T.S.O.—Tramcar Sponsorship Organisation

### I—HORSE TRAMS

| | *Date Built* | *Owner* | *Location* |
|---|---|---|---|
| Ryde Pier No. 3 | 1867 | Hull Museum | Hull Museum |
| Sheffield No. 15 | 1874 | T.M.S. | Crich |
| *North Metropolitan No. 39 (parts) | ? | M.A. Ward | Gidea Park |
| Douglas No. 14 | 1883 | B.R. | Clapham |
| Fintona Tram 381 | 1883 | Belfast Museum | Belfast Museum |
| Aberdeen No. 1 | *c.*1889 | Aberdeen Corporation | Shrubhill Works Edinburgh |
| Belfast 188 | *c.*1890 | Belfast Museum | Sandy Row |
| Portsmouth 84 (rebuilt as electric car, 1904) | 1891 | Portsmouth Corporation | North End Depot |
| *Glasgow 543 | 1894 | Glasgow Corporation | Coplawhill |
| Chesterfield 8 | 1897 | B.R. | Clapham |
| *Swansea & Mumbles replica horse car | 1954 | B.R. | Clay Cross |

### II—STEAM TRAMWAY LOCOMOTIVES

| | | | |
|---|---|---|---|
| Wantage Tramway No. 5 | 1857 | B.R. | Wantage Road Station |

| | | | |
|---|---|---|---|
| Oxford & Aylesbury flywheel locomotive | 1872 | B.R. | Clapham |
| Portstewart No. 1 | 1882 | Hull Museum | Hull Museum |
| Portstewart No. 2 | 1883 | Belfast Museum | Belfast Museum |
| Beyer Peacock No. 2 | 1885 | Beyer Peacock | Crich (on loan) |
| *Bury, Rochdale and Oldham No. 84 | 1886 | B.R. | Crewe Works |

**III—ELECTRIC TRAMCARS**

| | | | |
|---|---|---|---|
| Giant's Causeway trailer No. 5 | 1883 | Belfast Museum | Belfast Museum |
| Blackpool No. 1 | 1885 | T.M.S. | Clapham (on loan) |
| Bessbrook & Newry 2 | 1885 | Belfast Museum | Belfast Museum |
| Douglas Southern No. 1 | 1896 | B.R. | Clapham |
| *Glasgow 672 | 1898 | Glasgow Corporation | Coplawhill |
| Blackpool & Fleetwood 2 | 1898 | T.M.S. | Blackpool |
| Sheffield 46 | 1899 | T.M.S. | Crich |
| *Glasgow 779 | 1900 | Glasgow Corporation | Coplawhill |
| Glasgow 812 | 1900 | T.M.S. | Crich |
| *Leeds 6 (Hull 96) | 1900 | A. J. Brown and T. G. Cawthray | Park Side, Leeds |
| Aberdeen 14 | 1900 | 14 Group | Park (Aberdeen) |
| Glasgow works car 40 | 1900 | H. R. Mackenzie | Newtonhill |
| *Dublin Directors' Car | 1901 | H. K. Porter | Barnhill Road, Dalkey |

*Four ghostly shapes and one tram await the opening of the Museum of British Transport at Clapham, carefully shrouded in dust-sheets. From left to right they are Leeds 310, London 1025, Llandudno 6, London 290 and Sheffield 342. The large exhibits section of the museum was opened on 29th May 1963.*

*In summer, the Scottish Tramway Museum Society hold their meetings in Glasgow tram No. 1017, now located in a garden at Cambuslang. No. 1017 was built in 1904 as Paisley District Tramways No. 17, and later served Glasgow as driving-instruction car; another Paisley tram (No. 68) was donated by the Society to the Crich Tramway Museum.*

| | | | |
|---|---|---|---|
| *Glasgow 585 | 1901 | Science Museum London | Science Museum London |
| Hill of Howth 2 | 1901 | Orange Empire Trolley Museum | Perris, California, U.S.A. |
| *Hill of Howth 3 | 1901 | T.M.S.I. | Guinness Brewery, Dublin |
| Hill of Howth 4 | 1901 | Belfast Museum | Belfast Museum |
| *Hill of Howth 9 | 1902 | T.M.S.I. | Guinness Brewery, Dublin |
| Blackpool 49 | 1902 | T.M.S. | Crich |
| Hill of Howth 10 | 1902 | T.M.S. | Crich |
| Newcastle 102 | 1902 | T.M.S. | Montagu Motor Museum, Beaulieu (on loan) |
| Blackpool 59 (" Dreadnought ") | 1902 | T.M.S. | Crich |
| Glasgow 488 | 1903 | AMTUIR | Paris Transport Museum, Malakoff |
| *Derby 1 (body only) | 1903 | Derby Tramway Group | Derby |
| *Nelson 4 (body only) | 1903 | M. Harrison | Barrowford |
| Southampton 45 | 1903 | T.M.S. | Crich |
| *L.C.C. 106 (London Transport 022) | 1903 | B.R. | Clapham |
| *Hill of Howth 11 | 1903 | T.M.S.I. | Guinness Brewery, Dublin |
| Glasgow 1017 (body only) | 1904 | S.T.M.S. | Cambuslang |

| | | | |
|---|---|---|---|
| Leicester 76 | 1904 | T.M.S. | Crich |
| *Lowestoft 14 (body only) | 1904 | R. V. Bird | Lowestoft |
| Belfast 249 | 1905 | Belfast Museum | Belfast Museum |
| Cardiff 131 | 1905 | T.M.S. | Crich |
| M.E.T. 94 (body only) | 1905 | North London Tramway Group | Crumbles, Eastbourne |
| Johannesburg 20 | 1905 | T.S.O. | Newtown Depot, Johannesburg |
| Glasgow Cable-laying car No. 1 | 1906 | H.R. Mackenzie | Newtonhill |
| Glasgow Welding Car No. 21 | 1905 | T.M.S. | Crich |
| Sheffield 342 | 1907 | B.R. | Clapham |
| Sheffield 349 | 1907 | T.M.S. | Crich |
| Dublin 328 (parts) | 1908 | T.M.S.I. | Sutton |
| London Transport 1025 | 1908 | B.R. | Clapham |
| West Ham 102 (London Transport 290) | 1910 | B.R. | Clapham |
| 'Hull 132 | 1912 | T.M.S. | Crich |
| Birmingham 395 | 1912 | Museum of Science and Industry, Newhall Street, Birmingham | |
| Manchester 765 (body only) | 1913 | M.T.H.C. | Crich |
| Llandudno & Colwyn Bay No. 6 | 1914 | B.R. | Clapham |
| *Blackpool & Fleetwood No. 40 | 1914 | T.M.S. | Blackpool |

*When Sheffield Corporation closed its last tramways on 8th October, 1960, a procession of fifteen trams ran through immense crowds from the city to Beauchief and back. Five of them, shown here in the overhaul works, have been kept for posterity, mainly at the Crich Tramway Museum. Left to right, Nos. 513, 349, 510 ("Sheffield's Last Tram"), 189 and 46.*

| | | | |
|---|---|---|---|
| *Grimsby & Immingham No. 14 | 1915 | B.R. | Clay Cross |
| Glasgow 1068 (Paisley 68) | 1919 | T.M.S. | Crich |
| Gateshead 52 | 1920 | T.M.S. | Crich |
| Sheffield 330 | 1920 | T.M.S. | Crich |
| *Cheltenham 21 (body only) | 1921 | 21 Group | Leckhampton |
| Leeds 345 | 1921 | T.M.S. | Crich |
| Glasgow 22 | 1922 | Twenty-Two Fund | Coplawhill |
| Dublin 129 (body to be replaced by 109) | 1923 | T.M.S.I. | Sutton |
| *Glasgow 1088 | 1924 | Glasgow Corporation | Coplawhill |
| Blackpool 144 | 1924 | Seashore Electric Railway | Kennebunkport, Maine, U.S.A. |
| *Blackpool 147 | 1924 | Salford Museum | Blackpool |
| *Grimsby & Immingham 26 (Gateshead 10) | 1925 | B.R. | Clay Cross |
| Bradford 104 | 1925 | Bradford Corporation | Thornbury Works |
| Leeds 399 | 1925 | T.M.S. | Crich |
| *Blackpool 40 | 1925 | T.M.S. | Blackpool |
| *Glasgow 1089 | 1926 | Glasgow Corporation | Coplawhill |
| Grimsby & Immingham 20 (Gateshead 5) | 1927 | T.M.S. | Crich |
| Glasgow 1100 | 1928 | 1100 Group | Coplawhill |
| Glasgow 1115 | 1928 | T.M.S. | Crich |
| Blackpool 167 | 1928 | T.M.S. | Crich |
| *Swansea & Mumbles 2 | 1928 | M.R.P.S. | Park Side, Leeds |
| Belfast 357 | 1930 | Belfast Museum | Belfast Museum |
| London Transport 1858 | 1930 | P. J. Davis | Chessington Zoo |
| Sunderland 100 (M.E.T. 331) | 1930 | T.M.S. | Crich |
| *Leeds 160 | 1931 | Leeds City Museum | Park Side, Leeds |
| Leeds 180 | 1931 | T.M.S. | Crich |
| *Leeds 202 | 1931 | M.R.P.S. | Park Side, Leeds |
| *M.E.T. 355 | 1931 | B.R. | Clapham |
| *Leeds 517 | 1931 | M.R.P.S. | Park Side, Leeds |
| Leeds 526 (London Transport 2085) | 1931 | Seashore Electric Railway | Kennebunkport, Maine, U.S.A. |
| *Leeds tower car | 1932 | M.R.P.S. | Park Side, Leeds |
| L.C.C. No. 1 | 1932 | B.R. | Clapham |
| Sheffield 189 | 1934 | T.M.S. | Crich |
| Dublin 129 (parts) | 1935 | T.M.S.I. | Sutton |
| Liverpool 869 | 1936 | T.M.S. | Crich |
| Sheffield 264 | 1937 | T.M.S. | Crich |
| *Glasgow 1173 | 1938 | Glasgow Corporation | Coplawhill |
| *Liverpool 245 | 1938 | Liverpool Corporation | Edge Lane Works |

| | | | |
|---|---|---|---|
| Glasgow 1245 | 1939 | A. H. Gordon | Midland Motor Museum, Measham |
| Liverpool 293 | 1939 | Seashore Electric Railway | Kennebunkport, Maine, U.S.A. |
| *Glasgow 1274 | 1940 | Seashore Electric Railway | Coplawhill |
| Glasgow 1282 | 1940 | T.M.S. | Crich |
| Edinburgh 35 | 1948 | Edinburgh Corporation | Shrubhill Works, Edinburgh |
| *Glasgow 1297 | 1948 | A. Stevenson | Coplawhill |
| Sheffield 510 | 1950 | T.M.S. | Crich |
| *Sheffield 513 | 1950 | J. Rothera | Cullingworth |
| Glasgow 1392 | 1952 | B.R. | Clapham |
| *Leeds 601 | 1953 | M.R.P.S. | Park Side, Leeds |
| Leeds 602 | 1953 | T.M.S. | Crich |
| Leeds 600 | 1954 | T.M.S. | Crich |

**N.B. In addition to the complete tramcars listed above, about twenty electric tramcar trucks have been preserved, some as separate exhibits and some for use in restoring other trams. Many local museums also include scale model tramcars, and some include displays of tramcar accessories and photographs.**

# *Appendix II*

## Transport Museums mentioned in the text

**Crich Tramway Museum, Cliff Quarry, Crich, Derbyshire.** Six miles from Matlock; stations Matlock and Whatstandwell. Operated by the Tramway Museum Society, 1 Griffin Road, Erdington, Birmingham 23; membership enquiries to 412 Kings Road, Higher Hurst, Ashton-under-Lyne, Lancs. The museum is still under construction, but visitors may inspect the trams without charge at their own risk during daylight hours on Saturdays, Sundays and Bank Holidays, weather permitting; a horse tram can be operated by prior arrangement at summer weekends for visiting parties.

**Museum of British Transport, Triangle Place, Clapham, London S.W.4.** Nearest station, Clapham Common (London Transport). Operated by the Curator of Historical Relics, British Railways Board. Open each weekday from 10 a.m. to 5.30 p.m.

**Belfast Transport Museum, Witham Street, Newtownards Road, Belfast, Northern Ireland.** Operated by the City of Belfast Libraries, Museums and Art Galleries Committee. Open each weekday from 10 a.m. to 6 p.m. (9 p.m. on Wednesdays and Saturdays). Closed on Sundays.

**Glasgow Transport Museum Store, 522 Pollokshaws Road, Glasgow.** This Museum is a new project, expected to open in 1964, and will be operated by Glasgow Corporation Museums and Art Galleries, Department of Technology, Kelvingrove, Glasgow C.3.

**Middleton Railway Preservation Society, 21 Burley Wood Crescent, Leeds 4.** This Society exists to preserve and operate the Middleton colliery railway, but has also kept a number of trams. These are stored at Park Side, Leeds, and can only be seen by special arrangement.

**Edinburgh Transport Museum, Shrubhill Works, Edinburgh 7.** Operated by Edinburgh Corporation Transport Department, 14 Queen Street, Edinburgh 2. Open from summer 1963 on weekdays from 10 a.m. to 5 p.m.

**Montagu Motor Museum, Beaulieu, Hants.** Nearest stations, Brockenhurst and Lymington; with associated museums at Brighton Aquarium and at Measham, near Burton-on-Trent. Enquiries to the Administrator, Montagu Motor Museum, Beaulieu. Open daily throughout the year from 10.30 a.m. to 6 p.m. (5 p.m. in winter).

**Museum of Science and Industry, Newhall Street, Birmingham 3.** Operated by the City of Birmingham Museums and Art Galleries Committee. Open daily from 10.30 a.m. to 5.30 p.m. (2.30 p.m. to 5.30 p.m. on Sundays). Closed on Good Friday and Christmas Day.

**Hull Transport Museum, High Street, Hull.** Operated by the Director of Hull Municipal Museums, 23 High Street, Hull. Open on weekdays from 10 a.m. to 5 p.m. (2.30 p.m. to 4.30 p.m. on Sundays). Closed on Good Friday and Christmas Day.

**The Science Museum, Exhibition Road, South Kensington, London S.W.7.** Nearest station, South Kensington (London Transport). Open on weekdays from 10 a.m. to 6 p.m. Sundays from 2.30 p.m. to 6 p.m.

**Bradford Tramcar** (see page 41). This tram is operated for the public on two or three Saturday afternoons per year; dates and details from Mr. J. S. King, 564 Heaton Road, Heaton, Bradford, Yorks.

**Paris Transport Museum, 152 Boulevard Gabriel Péri, Malakoff.** Nearest station, Metro Porte de Vanves. Operated by the Association pour le Musée des Transports Urbains, Interurbains et Ruraux, 4, Rue Paul-Escudier, Paris 9e, France. The museum is not yet open to the public, but working parties take place each Saturday afternoon and members of any transport society or undertaking will be welcomed then as visitors.

**Belgian Tramway Museum, Schepdaal, near Brussels.** Reached by Vicinal tram from Brussels (Porte de Ninove). Operated by the Association pour le Musée du Tramway, 222 Avenue de la Couronne, Brussels 5, Belgium. Open on Saturdays, Sundays and holidays, Easter to October 31, from 1 p.m. to 5 p.m. Closed in Winter.

**Musée de la Voiture, Palais du Cinquantenaire, Brussels.** Open daily except Fridays from 9.30 a.m. to 12.30 p.m. and from 1.30 p.m. to 3 p.m.

**Netherlands Railway Museum (Tramway Section), Maliebaan Station, Johan van Oldenbarneveltlaan 6, Utrecht.** Operated by Netherlands Railways, open Tuesdays to Saturdays from 10 a.m. to 5 p.m. (4 p.m. in winter), also on Sunday afternoons. Closed on Mondays and on certain holidays.

**Netherlands Tramway Museum, 6 Kruisstraat, Weert, Netherlands.** Director, Mr. F. Kühne. Open by prior arrangement on weekday afternoons, April to October, from 2 p.m. to 5 p.m., Sundays from 12 noon until sunset. Closed in winter.

**Swiss Transport Museum (Verkehrshaus der Schweiz), Lidostrasse 5, Lucerne, Switzerland.** Open daily, March 16 to November 15, from 9 a.m. to 6 p.m., also on Tuesday, Thursday, Saturday and Sunday afternoons in winter.

**Seashore Trolley Museum, Log Cabin Road, Kennebunkport, Maine, U.S.A.** Operated by the New England Electric Railway Historical Society, 4 East Union Street, Goffstown, N.H., U.S.A. Open on Saturdays, Sundays and holidays from 12 noon to 5 p.m. (In July and August, daily from 10 a.m. to 6 p.m.). Car rides from May 30 to October 12.

**Orange Empire Trolley Museum, P.O. Box 501, Perris, California, U.S.A.** This is one of about fifteen regional " trolley museums " in the U.S.A., details of which may be obtained from the Association of Trolley Museums, 11307 Long Beach Boulevard, Lynwood, California, U.S.A.

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## *The Light Railway Transport League*

TRAMS are not to be found only in museums. They still form the basic means of transport in many towns overseas and the Light Railway Transport League was formed in 1937 to advocate their retention, modernisation and reinstatement here, in the belief that there was still a place for the tram in the transport of this country. Present day traffic trends have served to confirm this belief. With this in view, the League organises tours to tramway systems abroad and holds regular meetings in London and other major centres in Britain. However, trams of the past as well as trams of the present and future receive attention and in fact the League caters for all facets of tramways. The historic aspect is particularly featured in the many publications brought out by the League—general works as well as those dealing with individual systems. Most widely known is the monthly illustrated magazine *Modern Tramway*, now published jointly with Ian Allan Ltd., with its world coverage of tramway news, technical data, museum and modelling information.

For details of League membership and publications, you are invited to write to:

*Hon. Secretary,*
*Light Railway Transport League,*
*245 Cricklewood Broadway,*
*London, N.W.2.*

## *The Crich Tramway Museum*

UP in the Derbyshire hills, at the attractive village of Crich, a unique museum is taking shape—Britain's only operating tramway museum, sponsored and created by the members of the Tramway Museum Society. Soon, visitors will be able to ride on the kind of vehicle that once served every large town in Britain (and many smaller ones), and inspect horse, steam and electric trams brought from more than twenty towns in England, Scotland, Wales and Ireland. This exciting task is being carried out almost entirely by voluntary labour and paid for by donations and members' subscriptions.

The Tramway Museum Society, founded in 1955, is non-profit making and officially recognised as a charity. Anyone over 14 years of age may join—for details of junior, adult and life membership and Society publications, please write to:

*Hon. Treasurer,*
*The Tramway Museum Society,*
*412 King's Road,*
*Ashton-under-Lyne,*
*Lancashire.*

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